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**Signature**

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| Substitute for form 1449A/PTO                                                                 |   |    |   | <b>Complete if Known</b>              |  |
| <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b><br><br>(use as many sheets as necessary) |   |    |   | Application Number                    |  |
|                                                                                               |   |    |   | Filing Date                           |  |
|                                                                                               |   |    |   | First Named Inventor S. Mark Haugland |  |
|                                                                                               |   |    |   | Group Art Unit                        |  |
|                                                                                               |   |    |   | Examiner Name                         |  |
| Sheet                                                                                         | 1 | of | 2 | Attorney Docket Number H052722.0029US |  |



| U.S. PATENT DOCUMENTS |                      |                      |                                                 |                                               |
|-----------------------|----------------------|----------------------|-------------------------------------------------|-----------------------------------------------|
| Exr Initials          | U.S. Patent Document |                      | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
|                       | Number               | Kind Code (if known) |                                                 |                                               |
|                       | 3,944,910            |                      | Rau                                             | 03-1976                                       |
|                       | 4,185,238            |                      | Huchital et al.                                 | 01-1980                                       |
|                       | 4,209,247            |                      | Urano et al.                                    | 06-1980                                       |
|                       | 4,209,747            |                      | Huchital                                        | 06-1980                                       |
|                       | 4,899,112            |                      | Clark et al.                                    | 02-1990                                       |
|                       | 4,968,940            |                      | Clark et al                                     | 11-1990                                       |
|                       | 5,157,605            |                      | Chandler et al                                  | 10-1992                                       |
|                       | 5,594,343            |                      | Clark et al.                                    | 01-1997                                       |
|                       | 5,869,968            |                      | Brooks et al.                                   | 02-1999                                       |
|                       | 5,881,973            |                      | Agajanian et al.                                | 03-1999                                       |
|                       | 6,060,884            |                      | Meyer, Jr. et al.                               | 05-2000                                       |

| FOREIGN PATENT DOCUMENTS |                         |        |                      |                                                 |                                               |                |
|--------------------------|-------------------------|--------|----------------------|-------------------------------------------------|-----------------------------------------------|----------------|
| Exr Initials             | Foreign Patent Document |        |                      | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY | T <sub>1</sub> |
|                          | Country Code            | Number | Kind Code (if known) |                                                 |                                               |                |
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| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS |                                                                                                                                                                                                                                                                                                               |  |                |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|
| Exr Initials                                      | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. |  | T <sub>1</sub> |
|                                                   | <i>Dielectric-Independent 2-MHz Propagation Resistivities</i> , Peter T. Wu, John R. Lovell, Brian Clark, Stephan D. Bonner and Jacques R. Tabanou, Society of Petroleum Engineers, Inc. SPE 56448, 19 pages (© 1999)                                                                                         |  |                |
|                                                   | <i>New Developments In 2-MHz Electromagnetic Wave Resistivity Measurements</i> , S. Gianzero, G. A. Merchant, M. Haugland and R. Strickland, SPWLA 35 <sup>th</sup> Annual Logging Symposium, pp. 1-25 (June 19-22, 1994)                                                                                     |  |                |
|                                                   | <i>Vertical Deconvolution of 2 MHz Propagation Tools</i> , Richard Rosthal, David Allen and Stephen Bonner, SPWLA 34th Annual Logging Symposium, (June 13-16, 1993)                                                                                                                                           |  |                |
|                                                   | <i>Geometric Factor and Adaptive Deconvolution of MWD-PWR Tools</i> , Q. Zhou, D. J. Hilliker and D. Norwood, The Log Analyst, pp. 390-398 (July-August, 1992)                                                                                                                                                |  |                |
|                                                   | <i>Reconciling Differences in Depth of Investigation Between 2-MHz Phase Shift and Attenuation Resistivity Measurements</i> , Tarek Habashy and Barbara Anderson, SPWLA 32 <sup>nd</sup> Annual Logging Symposium, pp. 1-20 (June 16-19, 1991)                                                                |  |                |
|                                                   | <i>Complex Variables and Applications</i> 5 <sup>th</sup> Ed., Ruel V. Churchill and James Ward Brown, 2 cover pages and pp. 48-50 (©1990)                                                                                                                                                                    |  |                |
|                                                   | <i>Waves and Fields In Inhomogeneous Media</i> , Transients, Weng Cho Chew, 2 cover pages, pp. 244-246, 360-365 and 485-487 (©1990)                                                                                                                                                                           |  |                |



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|---------------------------------------------------------------------------------------------------|---|-------------------------------|------------------|
| Substitute for form 1449A/PTO                                                                     |   | <b>Complete Known</b>         |                  |
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|                                                                                                   |   | <b>First Named Inventor</b>   | S. Mark Haugland |
|                                                                                                   |   | <b>Group Art Unit</b>         |                  |
|                                                                                                   |   | <b>Examiner Name</b>          |                  |
| <b>Sheet</b>                                                                                      | 2 | <b>of</b>                     | 2                |
|                                                                                                   |   | <b>Attorney Docket Number</b> | H052722.0029US   |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS |                                                                                                                                                                                                                                                                                                               |                |
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|                                                   | <i>Algorithm 624: Triangulation and Interpolation at Arbitrarily Distributed Points In the Plane</i> , Robert J. Renka, ACM Transactions On Mathematical Software, Vol. 10, pp. 440-442 (December 4, 1984)                                                                                                    |                |
|                                                   | <i>A Triangle-Based C' Interpolation Method</i> , R. J. Renka and A. K. Cline, Rocky Mountain Journal of Mathematics, Vol. 14, No. 1, pp. 223-237 (Winter 1984)                                                                                                                                               |                |
|                                                   | <i>More On the Laterlog Device</i> , J. H. Moran and R. E. Chemali, Geophysical Prospecting 27, pp. 902-930 (1979)                                                                                                                                                                                            |                |
|                                                   | <i>Geophysics, A Journal of General and Applied Geophysics</i> , Published by The Society of Exploration Geophysicists, Vol. XXVII, No. 6, Part 1, cover page and pp. 828-858 (December 1962)                                                                                                                 |                |
|                                                   | <i>Effect of Tool Eccentricity on Some Electrical Well-Logging Tools</i> , John R. Lovell and Weng Cho Chew, IEEE Transactions on Geoscience and Remote Sensing, Vol. 28, No. 1, pp. 127-136 (January 1990)                                                                                                   |                |
|                                                   | BADEA, EUGENE A. AND EVERETT, MARK E., <i>3-D Finite Element Analysis of Induction Logging</i> , 4 pages (date unknown)                                                                                                                                                                                       |                |
|                                                   | <i>Fundamental Analysis of Remote-Field Eddy-Current Effect</i> , IEEE Transactions on Magnetism, Vol. 32, No. 4, pp. 3195-3211 (July 1996)                                                                                                                                                                   |                |
|                                                   | <i>Numerical Recipes</i> , The Art of Scientific Computing, ©Cambridge Press 1986 and © Numerical Recipes Software, 2 cover pages, pp. 52-65 and 520-527 (1986)                                                                                                                                               |                |
|                                                   | <i>NAG Fortran Library Manual Mark 18</i> , ©The Numerical Algorithms Group Limited, Vol. 4, D04-4E04L cover pages and pp. E04.1-E04.16 and 1-6 (September 1997)                                                                                                                                              |                |
|                                                   | <i>New Discovery with Important Implications for LWD Propagation Resistivity Processing and Interpretation</i> , S. Mark Haugland, SPWLA 42 <sup>nd</sup> Annual Logging Symposium, pp. 1-14 (June 17-20, 2001)                                                                                               |                |

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| <b>Examiner<br/>Signature</b> |  | <b>Date<br/>Considered</b> |  |
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